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(54) **THREE DIMENSIONAL (3D) TRANSVERSE OSCILLATION VECTOR VELOCITY ULTRASOUND IMAGING**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

An ultrasound imaging system (**300**) includes a transducer array (**302**) with a two-dimensional array of transducer elements configured to transmit an ultrasound signal and receive echoes, transmit circuitry (**304**) configured to control the transducer array to transmit the ultrasound signal so as to traverse a field of view, and receive circuitry (**306**) configured to receive a two dimensional set of echoes produced in response to the ultrasound signal traversing structure in the field of view, wherein the structure includes flowing structure. A beamformer (**312**) configured to beamform the echoes, and a velocity processor (**314**) configured to separately determine a depth velocity component, a transverse velocity component and an elevation velocity component, wherein the velocity components are determined based on the same transmitted ultrasound signal and the same received set of two dimensional echoes.

25 Claims, 7 Drawing Sheets